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INTRODUCTION

The Utah State Water Plan provides the direction for establishing and implementing state water policies and recommendations. As a part of the state water planning process, detailed plans are prepared for each of the state's eleven hydrologic basins. This Bear River Basin Plan has been prepared at a reconnaissance level, and gives a general assessment of water related problems, issues, and concerns within the basin. Previous water related studies conducted by state and federal agencies have provided important background information in the preparation of this report. It should be stressed that basin planning is a continuous process, and that the basin plans are intended to be flexible enough to allow for future revisions. Indeed, this Bear River Basin Plan reflects changes in approach to Bear River development since the plan was first published in 1992.

The Bear River Basin has a plentiful water supply and is one of the few areas in the state with a

significant amount of developable water. It is anticipated that Bear River water will eventually be developed to satisfy growing needs for areas within and outside the basin. Growth in Salt Lake, Weber and Davis Counties has planners projecting a need to import Bear River water within the next 20 to 30 years. Most communities within the basin have adequate water to meet their projected needs for at least the next twenty years, although several communities will need to augment their supplies. It is also possible that industrial, commercial and even some agricultural growth could necessitate the development of new sources of water within the basin. Regardless of whether the pressure for new water development comes from within or outside of the basin, or whether it results from municipal, industrial, or some other use, a long-term planning effort is needed in the Bear River Basin. This planning effort will assure the future development of this valuable resource reflects local and statewide concerns for the watershed, the environment, as well as meet the water needs of a growing state.



Bear River Below Cutler Reservoir

This document is not a plan for the construction of any particular project. Rather, it is a document that identifies the basin's current and projected water use and related issues. The purpose of this document is to provide planners with a snapshot of the current use of water throughout the basin, and a projection of how those uses may change over the next 20 to 50 years. It will discuss water quality, environmental and other issues associated with the current and projected water uses and will identify methods of dealing with increasing water demands, including potential development projects.

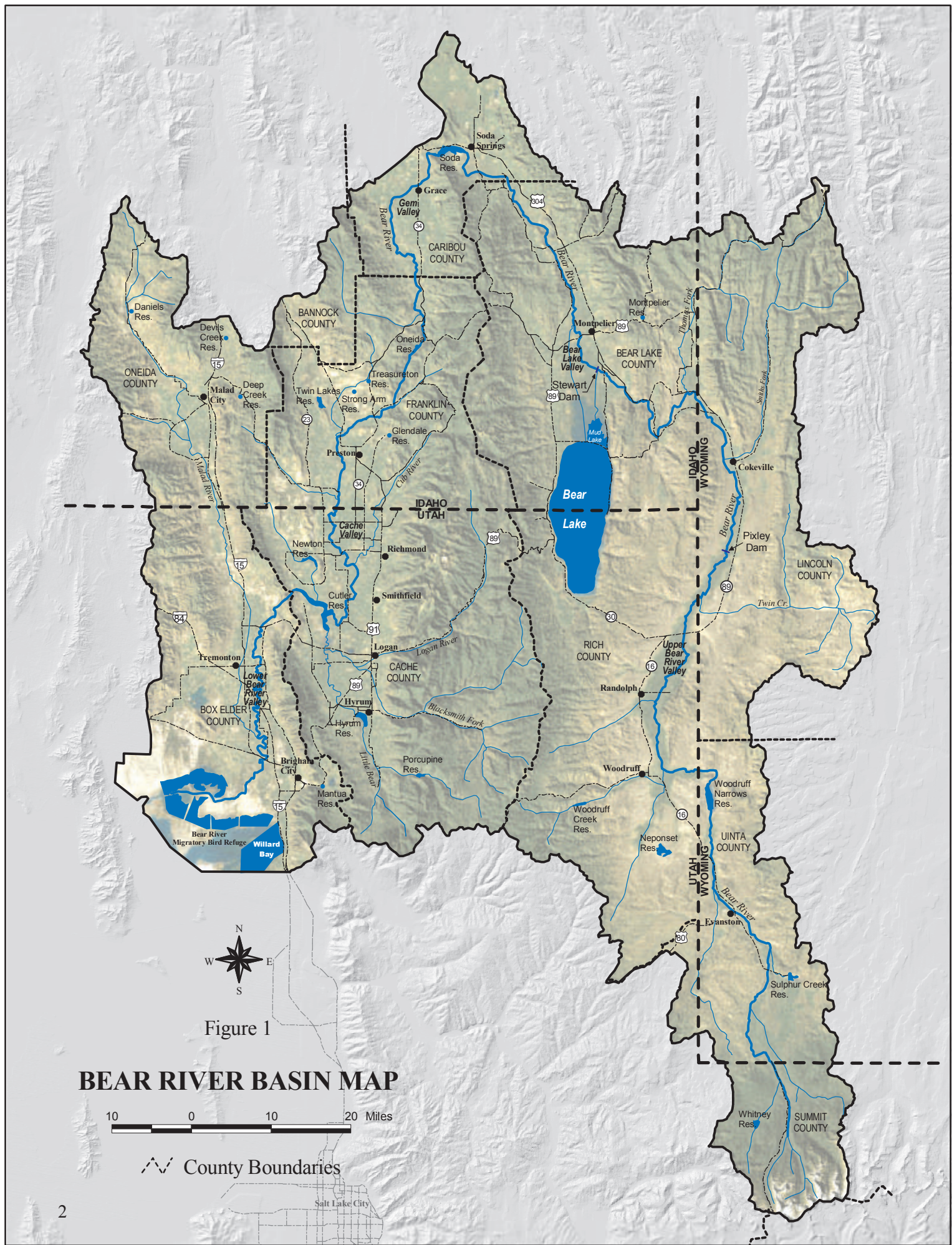


Figure 1

BEAR RIVER BASIN MAP

10 0 10 20 Miles

County Boundaries

Ultimately, local authorities and citizenry will have the final say on development and use of the Bear River's considerable resources. It is intended that this document will assist local planners with their efforts to effectively manage the Basin's water resources.

PURPOSE OF THE PLAN

In 1990 the Division of Water Resources published a State Water Plan. This plan provided a broad overview of the state's water resources and projected needs. The State Water Plan was followed by a series of river basin plans, which reflected the plan's format but provided much more detail.

The Bear River Basin was the first of the state's eleven basins to be evaluated in detail, with a basin plan published in 1992. The plan has proved to be a valuable document to the division, other state agencies, and to many of the local city and county planners in the Bear River Basin. Through the years it is anticipated that social, technologic and economic changes will all have an impact on the basin's water-related issues and concerns. Consequently, the state and basin water-planning processes have been dynamic in nature and, as such, the plans are updated as necessary to ensure that the information contained in each plan is current and accurate. The Utah State Water Plan was rewritten in May 2001, with the publication of *Utah's Water Resources: Planning for the Future*. The *Bear River Basin: Planning for the Future* follows the format of that document in terms of chapter headings, sub-headings, figures and tables.

The Bear River Basin Plan has been rewritten for a number of reasons. Although it has only been 10 years since the Bear River Basin Plan was published, considerable growth and change have occurred in the basin. Information from many studies and publications during that same period of time should be included in the basin plan to better define the current and projected water supply, uses, plans and issues. Also the original Bear River Basin Plan did not address secondary water use as thoroughly as subsequent basin plans for other areas of the state.

This new document will address these topics as well as other changes in management of the Bear River. The past decade has seen a growing concern

for water quality, recreational, and environmental issues. These issues play an ever-increasing role in the management of the river, the reservoirs, and the basin's other natural resources. These changing attitudes are reflected in the Bear River Commission, in the FERC dam re-licensing process, and in PacifiCorp's (formerly Utah Power and Light) management of releases from its reservoirs.

Although this document replaces the 1992 document as the Bear River Basin Plan, there is a valuable collection of pertinent data and useful information that will not entirely be revisited here. While this report will update population projections, land use, water supply, and management practices, much of the detailed information included in the 1992 Bear River Basin Plan is unchanged and will not be reprinted in this document. Some of these items include:

- a detailed description of the basin topography, geology, soils, and climate;
- an inventory of potentially irrigable lands in the basin;
- a detailed description of the state and federal regulatory agencies and their responsibilities; and
- a description of the state and federal water-funding programs.

The 1992 Bear River Basin Plan is no longer in print, but it can be accessed on the Internet at the following address: <http://www.water.utah.gov>. Once there click the "River Basin Plans" subheading of the "Planning Programs" button.

PLANNING PROCESS

By the conclusion of the review and approval process, four drafts of this document will have been prepared. These are: (1) In-House, (2) Committee, (3) Advisory, and (4) Public review drafts. After this process, the final report will be distributed to the public for its information and use. Public involvement is an important part of the planning process, and is necessary in assessing actual viewpoints and conditions in the basin. The opportunity for public discussion and input has been, and will continue to be, provided at the local, state, and federal levels as plan formulation moves through various phases.

DESCRIPTION OF THE BASIN

The Bear River Basin is in northern Utah, southeastern Idaho, and southwestern Wyoming. The basin covers approximately 7,500 square miles of mountain and valley land, including approximately 3,300 square miles in Utah, 2,700 square miles in Idaho, and 1,500 square miles in Wyoming.

The Bear River Basin is in the northeastern portion of the Great Basin. The Great Basin is unusual in that it is entirely enclosed by mountains, thus forming a huge bowl with no external drainage outlet. The Bear River empties into the Great Salt Lake, a remnant of ancient Lake Bonneville, which at one time occupied a large portion of the eastern Great Basin. The Bear River is the western hemisphere's largest stream that does not reach the ocean.

As shown in Figure 1, the headwaters of the Bear River are in Summit County, Utah on the north slope of the Uinta Mountains, approximately 60 miles due east of Salt Lake City. The Bear River follows a 500-mile circuitous route, crossing the Utah-Wyoming state line three times before flowing into Idaho, then turning south and returning to Utah and ultimately flowing into the Great Salt Lake, less than 100 miles from its headwaters.

For the first 20 miles of its course the Bear River flows down the north slope of the Uinta Mountains. As it crosses the Utah-Wyoming state line the river enters a series of five major valleys that extend along its course: Upper Bear River Valley, Bear Lake Valley, Gem Valley, Cache Valley, and Lower Bear River Valley. The arable lands throughout the basin are situated in the valleys along the main stem of the river and its tributaries. The elevations of these arable valleys range from 4,200 feet above sea level at Bear River Bay to 7,800 feet in the Upper Bear River Valley near Evanston, Wyoming. These valleys are separated by narrow canyons or gorges and bordered by jagged, sharply rising mountain ranges, which reach elevations in excess of 10,000 feet above sea level. Among the 9,000 to 13,000 foot peaks in the upper reaches of the river, numerous small lakes in glacially carved cirque basins serve as catchment areas for precipitation, most of which falls as snow.

HISTORIC DEVELOPMENT OF THE RIVER

The earliest water users in the Bear River Basin were irrigators in the Lower Bear River Valley and in Cache Valley. Consequently, they hold the earliest water rights. The management of the river is accomplished with delivery of irrigation water as the primary objective. One of the earliest efforts by irrigators to provide late-season irrigation water was to put Bear Lake to work as a storage reservoir.

Bear Lake is near the mid-point of the river's course from the Uinta Mountains to the Great Salt Lake. A few miles after entering Idaho, the Bear River flows westward into Bear Lake Valley. Bear Lake, at the south end of this valley, is about 20 miles long and seven miles wide. Historically, the river did not naturally flow into the lake. The feasibility of diverting water from Bear River into Bear Lake was presented in the Department of Agriculture Bulletin No. 70 in 1898. This was seen as a viable solution to overly abundant natural flows in the early summer followed by late summer low flows, inadequate for irrigation. In 1902 Telluride Power (predecessor to Utah Power and Light) began constructing inlet and outlet canals in an effort to divert Bear River water into the lake for later release during the agricultural growing season. In 1914 the Lifton pumping plant was constructed, at the north end of the lake, to pump water from Bear Lake into the outlet canal. These improvements and later modifications have created an active storage capacity of 1,452,000 acre-feet in Bear Lake and the ability to regulate the flow of the river.

Between 1904 and 1912, Telluride Power constructed five hydroelectric power plants below Bear Lake. These power plants at Soda, Grace, Cove, Oneida, and Cutler generate power from run-of-the-river flows. Between 1912 and 1916, Utah Power and Light entered into water-delivery contracts with the major irrigation companies along the Bear River. Releases from Bear Lake today are made to accommodate the irrigation demands in Cache and Box Elder counties in Utah and in Franklin and Caribou counties in Idaho with power generation as a secondary benefit.